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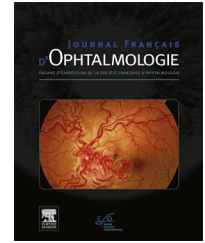


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LETTER TO THE EDITOR

Abducens nerve palsy following BBIBP-CorV (Sinopharm) COVID-19 vaccine



Paralysie du sixième nerf crânien après vaccination contre la COVID-19

The COVID-19 disease was described as clinical manifestation of pneumonia symptoms in China in December 2019 and was recognized as pandemic by the World Health Organization in March 2020 [1]. However, there is no definite treatment for the disease; prevention of disease by social distancing, using face mask and alcohol based hand sanitizers are the best strategies to halt the COVID-19 spread. Ophthalmological manifestations of COVID-19 are rare in comparing with other clinical symptoms of disease such as fever, cough and pneumonia [2]. There are scarce reports of ocular nerve palsy after COVID-19 vaccination [3]. Here, we would like to report a case of isolated abducens nerve palsy after Sinopharm (BBIBP-CorV) vaccine.

A Caucasian 63-year-old man, with previous history of hypertension and diabetic mellitus II, was visited in Poostchi Eye clinic, affiliated to Shiraz University of Medical Sciences in June 2021 due to development of diplopia from morning. His diplopia was worsening by looking to left direction and there was no previous history of head/ocular trauma and ophthalmic diseases (Fig. 1). Also, the patient had no history of retinal surgery or retinal laser photocoagulation or intravitreal injections. Physical examination showed stable vital signs and there were no sign of COVID-19 as well as other infectious diseases while the patient was afebrile without cough, headache, sore throat, gastrointestinal symptoms such as nausea/vomiting and diarrhea. The patient had received Sinopharm vaccine 10 days ago and had fever and chills controlled with acetaminophen 500 mg up to 48 hours after vaccination. Best-corrected visual acuity was 20/20 OU and slit lamp examination and fundoscopy did not revealed any pathological findings in anterior or posterior chamber. Pupils were symmetrical, round with normal size and reactive to light. Relative afferent pupillary defect was normal and ocular gaze was limited in lateral gaze of left eye. Brain MRI did not revealed any pathological findings such as space occupying lesions. Also, COVID-19 PCR was negative. Patient was diagnosed as abducens nerve palsy.

In this report, we introduced a case of six nerve palsy following Sinopharm vaccine. However, there is another documented case of six nerve palsy after Pfizer vaccine [4]. Also, another case of abducens nerve palsy have been visited



Figure 1. Examination of a Caucasian 63-year-old man with previous history of hypertension and diabetic mellitus II.

by our present research team following Bharat vaccination (Isolated abducens nerve palsy following Covid-19 vaccine, unpublished data).

Isolated six nerve palsy is the most common ocular motor palsy and the second most prevalent palsy after routine vaccination. There are many causes of six nerve palsy but trauma, viral infection, microvascular events, demyelinating diseases, space occupying lesions are most ones [5]. COVID-19 virus could infect central nervous system by different pathways such as direct neuroinvasive capability via infected leukocytes or lymphatic rout and retrograde direction of virus through olfactory bulb involvement. Additionally, corona virus could involve the cranial nerves indirectly by inciting proinflammatory cytokines and possibly demyelinating immune mediated process [2].

Recently, Reyes-Capo et al. reported first case of abducens nerve palsy following Pfizer BioNTech COVID-19 vaccine [4]. Their case was a 59-year-old woman with horizontal diplopia two days after getting Pfized BioNTech vaccine without any abnormal findings in physical examination, slit lamp and MRI assessment except limitation of abduction in right eye. The authors speculated indirect invasion to six nerve by viral-inflammatory reaction as there were no microvascular risk factors such as diabetes mellitus or hypertension. More recently, Pereira and Haslett documented a case of six nerve palsy following second dose of

AstraZeneca COVID-19 Vaccine. The patient was a 65 year-old man who experienced right sixth nerve palsy three days after getting AstraZeneca covid-19 vaccine [6]. In addition, another 45 year-old male with abducens nerve palsy following Pfizer BioNTech has been recorded in Venezuela. Interestingly, the authors found enhancement in root exit zone and the cisternal portion of abducens nerve in MRI. They reported no temporal relationship of diplopia first presentation and getting vaccine, suggesting inflammatory process will be the most possibly case of sixth nerve palsy after Covid-19 vaccine [7]. Another case of sixth nerve palsy was visited in our clinic following Bharat vaccine without any underlying disease predisposing microvascular events (unpublished data) [8]. Clinical manifestation of sixth nerve palsy was occurred in 10 (present case) and 14 days after getting vaccination. Such delay in presentation may be attributed to time of immune system complex formation and deposition as well as inflammatory process prompted by Sinopharm vaccine or microvascular (thrombosis) event.

Finally, as many countries commenced COVID-19 vaccination, we would like to bring the attention of ophthalmologists, neuro-ophthalmologists as well as neurologists to isolated sixth nerve palsy as one of the rare complications of COVID-19 vaccination.

Ethics

The protocol of study was approved by local ethical committee of Shiraz University of Medical Sciences (ID: IR.SUMS.REC.1400.581). The patient signed written consent form to publishing his data.

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Disclosure of interest

The authors declare that they have no competing interest.

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